

Amendments to the Specification:

On page 1, prior to the first paragraph which begins on line 2, please insert the following:

FIELD OF THE INVENTION

Please replace the paragraph which begins on page 1, line 11 and ends on line 24, with the following rewritten paragraph:

Background of the Invention

Sensors in the field of process measurement technology are subject~~[[,]]~~ however, to a ~~strongly~~ strong application-related aging over time. Especially sensors used in liquid media, for instance for monitoring chemical processes~~[[,]]~~ . They are subjected to special demands, so that the requirements for their chemical and thermal resistance are high. Likewise, fouling and accretion formation on the sensor in the course of media contacts can interfere with its effectiveness and decrease its service life. The ability of a sensor to function and its service life are impaired, respectively influenced, by external factors or internal factors present in the sensor. It has, consequently, not been possible, to state, or predict, the service life of a sensor, neither in general, nor even for sensors in special cases of application. This situation is clearly disadvantageous.

Please replace the paragraphs which begin on page 2, line 33 and which ends on page 3, line 3, with the following rewritten paragraph:

There is a multitude of methods for monitoring the functioning of sensors in the field of process measurement technology, wherein the instantaneous successful functioning of sensors is checked, always on the basis of test parameters. DE 42 12 792 C2 and DE 34 19 034 are named by way of example.

~~DE 42 12 792 G2 and DE 34 19 034 are named by way of example.~~

On page 3, prior to the paragraph which begins on line 4, please insert the following:

SUMMARY OF THE INVENTION

Please replace the paragraph which begins on page 3, line 4 and which ends on line 11, with the following rewritten paragraph:

An object of the present invention is to ~~improve~~ provide a method for monitoring the functioning of sensors for the measuring and monitoring of state parameters of liquids or gases, especially in the field of process measurement technology, for example, of electromechanical, eletrophysical or optical sensors, wherein the sensor is placed at time intervals in a test state and test parameters are registered, or test parameters are registered at time intervals during the course of registering measured values, functional monitoring, as defined in the preamble of claim 1, such that it can be excluded that the sensor loses its ability to function during the subsequent operating period, until the next test of its functioning, and, indeed, without that the sensor is replaced long before reaching its wear limit, so that the useful service life of the sensor can be taken advantage of, to a maximum possible extent.

Please replace the paragraph which begins on page 5, line 13 and which ends on line 19, with the following rewritten paragraph:

According to a further ~~form~~ of embodiment of the invention, it could, however, also be tested, whether, before the next determining of test parameters, thus especially before the next calibration cycle, the wear limit will be reached. Depending on circumstances, a corresponding warning can be issued, or various other measures can be initiated, for instance automatic cleaning measures.

Please replace the paragraph which begins on page 5, line 27 and which ends on line 33, with the following rewritten paragraph:

In an especially preferred, further development of the ~~idea of the~~ invention, it is provided that, on the basis of information obtained according to the invention concerning the duration of the remaining, disturbance-free operation, measures can be determined and issued and/or displayed and, perhaps, initiated, for maintenance, for example cleaning measures, replacement of the sensor liquid, of wear parts, or of filters or the like.

Please replace the paragraphs which appear on page 7, line 1 and which ends line 9, with the following rewritten paragraph:

However, also the change of the dynamic behavior of signals produced by the sensor itself can be registered and evaluated as test parameter. Thus, for example, the rise, respectively fall, time in the case of the signal registration, or the signal response time, or the dynamic behavior of the noise of the sensor, can be used according to the invention for the function monitoring. Dynamic behavior can be determined, for example, using a cyclovoltogram.

~~Dynamic behavior can be determined, for example, using a cyclovoltogram.~~

On page 8, prior to the paragraph which begins on line 12, please insert the following:

BRIEF DESCRIPTION OF THE DRAWINGS

Please replace the paragraph which begins on page 8, line 12 and which ends on line 18, with the following rewritten paragraph:

Further features, details and advantages of the invention will be apparent from the patent claims, the drawing and the description below of a preferred form of embodiment of the invention. The figures of the drawing show as follows:

Fig. 1 is a schematic presentation of a part of a measuring setup; and

Fig. 2 is a plot of sensor-specific test parameters over time.

On page 8, prior to the paragraph which begins on line 19, please insert the following:

DESCRIPTION OF THE PREFERRED EMBODIMENTS